

## Claims

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is as follows:

- 1        1.        A high efficiency dual rotor wind turbine, comprising:  
2        a rotatable drive shaft;  
3        a first rotor assembly having a plurality of first rotor blades radially extending from a first  
4                hub that is connected to said drive shaft;  
5        a second rotor assembly having a plurality of second rotor blades radially extending from  
6                a second hub; and  
7        means for coupling said second hub to said drive shaft rearward of said first rotor  
8                assembly for rotation of said second rotor assembly thereabout independent of  
9                rotation of said first rotor assembly.
- 1        2.        The wind turbine as in claim 1 wherein said coupling means is a plurality of  
2        bearings.
- 1        3.        The wind turbine as in claim 1 wherein said first rotor assembly includes a first  
2        diameter and said second rotor assembly includes a second diameter larger than said first  
3        diameter.

1           4.     The wind turbine as in claim 1 further comprising means for rotatably orienting  
2     said first and second rotor assemblies into the wind.

1           5.     The wind turbine as in claim 1 further comprising a tail rearward of said second  
2     rotor assembly for maintaining the orientation of said first and second rotor assemblies into the  
3     wind.

1           6.     The wind turbine as in claim 1 wherein said plurality of second rotor blades are  
2     angled for rotating said second rotor assembly in the same direction as said first rotor assembly.

1           7.     The wind turbine as in claim 1 further comprising a first stage generator rotatably  
2     coupled to said drive shaft.

1           8.     The wind turbine as in claim 7 further comprising a second stage generator  
2     operatively connected to said second rotor assembly.

1           9.     The wind turbine as in claim 8 wherein pulleys and a belt operatively connect said  
2     second stage generator to said second rotor assembly.

1        10.    The wind turbine as in claim 8 wherein:  
2        said first stage generator is an AC electrical generator, a DC electrical generator, a pump,  
3                or a compressor; and  
4        said second stage generator is an AC electrical generator, a DC electrical generator, a  
5                pump, or a compressor.

1        11.    The wind turbine as in claim 8 further comprising:  
2        a housing defining an interior space;  
3        wherein said first and second stage generators are situated in said housing; and  
4        wherein said second rotor assembly is positioned intermediate said first rotor assembly  
5                and said housing.

1        12.    The wind turbine as in claim 11 wherein said housing includes a rotary base for  
2        rotation of said wind turbine.

1        13.    A high efficiency dual rotor wind turbine, comprising:  
2        a rotatable drive shaft;  
3        a first rotor assembly having a plurality of first rotor blades radially extending from a first  
4                hub that is connected to said drive shaft such that said drive shaft is rotated upon  
5                passage of an air stream across said plurality of first rotor blades;  
6        a second rotor assembly having a plurality of second rotor blades radially extending from  
7                a second hub;  
8        means for coupling said second hub to said drive shaft rearward of said first rotor  
9                assembly for rotation of said second rotor assembly thereabout independent of  
10               rotation of said first rotor assembly, whereby said drive shaft is further rotated  
11               upon passage of said air stream across said second plurality of second rotor  
12               blades;  
13        means for rotatably orienting said first and second rotor assemblies into the wind;  
14        a tail rearward of said second rotor assembly for maintaining the orientation of said first  
15               and second rotor assemblies into the wind;  
16        a first stage generator rotatably coupled to said drive shaft for actuation thereby; and  
17        a second stage generator operatively connected to said second rotor assembly.

1        14.    The wind turbine as in claim 13 wherein said first rotor assembly includes a first  
2        diameter and said second rotor assembly includes a second diameter larger than said first  
3        diameter.

1        15.    The wind turbine as in claim 13 further comprising:  
2        a housing defining an interior space;  
3        wherein said first and second stage generators are situated in said housing; and  
4        wherein said second rotor assembly is positioned intermediate said first rotor assembly  
5        and said housing.

1        16.    The wind turbine as in claim 13 wherein:  
2        said first stage generator is an AC electrical generator, a DC electrical generator, a pump,  
3        or a compressor; and  
4        said second stage generator is an AC electrical generator, a DC electrical generator, a  
5        pump, or a compressor.

1        17.    The wind turbine as in claim 16 wherein said first rotor assembly includes a first  
2        diameter and said second rotor assembly includes a second diameter larger than said first  
3        diameter.

1        18.    The wind turbine as in claim 16 further comprising:  
2        a housing defining an interior space;  
3        wherein said first and second stage generators are situated in said housing; and  
4        wherein said second rotor assembly is positioned intermediate said first rotor assembly  
5        and said housing.

1           19.    The wind turbine as in claim 18 wherein said first rotor assembly includes a first  
2   diameter and said second rotor assembly includes a second diameter larger than said first  
3   diameter.

1           20.    The wind turbine as in claim 13 wherein said means for coupling said second  
2   rotor assembly to said drive shaft includes a ratchet assembly for engaging said drive shaft when  
3   said second rotor assembly is rotating at least as fast as said first rotor assembly and for releasing  
4   said drive shaft to rotate freely if said second rotor assembly is rotating slower than said first  
5   rotor assembly.